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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/471,281	12/23/1999	RODOLPHE NASTA	Q57406	7223

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EXAMINER	
MILLER, BRANDON J	

ART UNIT	PAPER NUMBER
2683	19

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/471,281	Applicant(s) NASTA, RODOLPHE
	Examiner Brandon J Miller	Art Unit 2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2004* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiedeman in view of Levanon.

Regarding claim 1 Wiedeman teaches a method of transmitting signals to a satellite having at least two antennas whose radiation patterns overlap, at least in part, and means for receiving the signals (see col. 4, lines 25-30 and col. 5, lines 20-27). Wiedeman teaches transmitting the signals as spread spectrum modulated signals (see col. 4, lines 1-3). Wiedeman teaches receiving the signals via at least two antennas (see col. 5, lines 56-59). Wiedeman teaches summing the signals received via the at leas two antennas (see col. 6, lines 39-41). Wiedeman teaches demodulating summed signals (see col. 14, lines 1-3). Wiedeman does not specifically teach delaying at least one of the signals received via the at least two antennas so that a path difference between the summed signals is at least one chip of the spread spectrum modulation. Levanon teaches delaying at least one of the signals received so that a path difference between the summed signals is at least one chip of the spread spectrum modulation (see col. 12, lines 65-67 and col. 13, lines 1-3). It would have been obvious to one of ordinary skill in the art a the time the invention was made to make the device adapt to include delaying at

least one of the signals received via the at least two antennas so that a path difference between the summed signals is at least one chip of the spread spectrum modulation because this would allow for an improved method for rapidly determining the position of a user device in a satellite communication system.

Regarding claim 2 Wiedeman teaches a method of transmitting signals to a satellite having at least two antennas whose radiation patterns overlap, at least in part, and means for sending the signals (see col. 4, lines 25-30 and col. 5, lines 20-27). Wiedeman teaches spread spectrum modulating the signals to be transmitted (see col. 4, lines 1-3). Wiedeman teaches sending the spread spectrum modulated signals via at least two antennas (see col. 5, lines 66-67, col. 4, lines 1-3 and FIG. 3B). Wiedeman teaches transmitting the signals as spread spectrum modulated signals (see col. 4, lines 1-3). Wiedeman teaches antennas being offset (see col. 8, lines 65-67). Wiedeman does not specifically teach at least two antennas being offset by at least one chip of the spread spectrum modulation. Levanon teaches sequences offset by at least one chip of the spread spectrum modulation (see col. 12, lines 65-67 and col. 13, lines 1-3). It would have been obvious to one of ordinary skill in the art a the time the invention was made to make the device adapt to include at least two antennas being offset by at least one chip of the spread spectrum modulation because this would allow for an improved method for rapidly determining the position of a user device in a satellite communication system.

Regarding claim 3 Wiedeman teaches modulating the signals to be transmitted via at least two antennas (see col. 4, lines 1-3 & 51-55). Wiedeman teaches antennas being offset (see col. 8, lines 65-67). Levanon teaches spreading sequences offset by at least one chip of the spread spectrum modulation (see col. 12, lines 65-67 and col. 13, lines 1-3).

Regarding claim 4 Levanon teaches applying a time-delay to the signals (see col. 9, lines 5-9).

Regarding claim 5 Wiedeman teaches a method of transmitting signals to a satellite having at least two antennas whose radiation patterns overlap, at least in part, and means for sending the signals (see col. 4, lines 25-30 and col. 5, lines 20-27). Wiedeman teaches spread spectrum modulating the signals to be transmitted (see col. 4, lines 1-3). Wiedeman teaches sending the spread spectrum modulated signals via at least two antennas (see col. 5, lines 66-67, col. 4, lines 1-3 and FIG. 3B). Wiedeman teaches transmitting the signals as spread spectrum modulated signals (see col. 4, lines 1-3). Wiedeman does not specifically teach signals transmitted via at least two antennas being spread spectrum modulated using different sequences. Levanon teaches signals transmitted being spread spectrum modulated using different sequences (see col. 16, lines 54-58). It would have been obvious to one of ordinary skill in the art a the time the invention was made to make the device adapt to include signals transmitted via at least two antennas being spread spectrum modulated using different sequences because this would allow for an improved method for rapidly determining the position of a user device in a satellite communication system.

Regarding claim 6 Wiedeman teaches a satellite having at least two antennas whose radiation patterns overlap, at least in part, and means for receiving the signals (see col. 4, lines 25-30 and col. 5, lines 20-27). Wiedeman teaches receiving the summed signals via at least two antennas (see col. 5, lines 56-59 and col. 6, lines 39-41). Wiedeman teaches demodulating spread spectrum signals (see col. 14, lines 1-3). Wiedeman does not specifically teach an absolute difference between respective transmission times of the signals received by the receiver

via the at least two antennas is greater than on chip of the spread spectrum modulation. Levanon teaches the difference between respective transmission times of signals that is greater than on chip of the spread spectrum modulation (see col. 9, lines 5-12). It would have been obvious to one of ordinary skill in the art a the time the invention was made to make the device adapt to include an absolute difference between respective transmission times of the signals received by the receiver via the at least two antennas is greater than on chip of the spread spectrum modulation because this would allow for an improved method for rapidly determining the position of a user device in a satellite communication system.

Regarding claim 7 Wiedeman teaches a coupler for signals from the antennas and at least two receivers connected to the coupler (see col. 5, lines 56-59).

Regarding claim 8 Levanon teaches a device as recited in claim 4 and is rejected given the same reasoning as above.

Regarding claim 9 Levanon teaches a time-delay unit that includes at least one of a coaxial connection, a delay line or a surface wave filter (see col. 9, lines 5-8 and FIG. 2).

Regarding claim 10 Wiedeman teaches a satellite having at least two antennas whose radiation patterns overlap, at least in part. Wiedeman teaches transmitting the signals to the at least two antennas (see col. 4, lines 24-30). Wiedeman teaches spread spectrum modulating signals (see col. 4, lines 1-3). Wiedeman does not specifically teach an absolute difference between respective transmission times of the signals received by the receiver via the at least two antennas is greater than on chip of the spread spectrum modulation. Levanon teaches the difference between respective transmission times of signals that is greater than on chip of the spread spectrum modulation (see col. 9, lines 5-12). It would have been obvious to one of

ordinary skill in the art a the time the invention was made to make the device adapt to include an absolute difference between respective transmission times of the signals received by the receiver via the at least two antennas is greater than on chip of the spread spectrum modulation because this would allow for an improved method for rapidly determining the position of a user device in a satellite communication system.

Regarding claim 11 Wiedeman teaches a satellite having at least two antennas whose radiation patterns overlap, at least in part, and means for sending the signals (see col. 4, lines 25-30 and col. 5, lines 20-27). Wiedeman teaches sending signals to the at least two antennas (see col. 4, lines 24-30). Wiedeman teaches spread spectrum modulating the signals to be transmitted (see col. 4, lines 1-3). Wiedeman does not specifically teach modulating the signals transmitted via at least two antennas using different sequences. Levanon teaches signals transmitted being spread spectrum modulated using different sequences (see col. 16, lines 54-58). It would have been obvious to one of ordinary skill in the art a the time the invention was made to make the device adapt to include modulating the signals transmitted via at least two antennas using different sequences because this would allow for an improved method for rapidly determining the position of a user device in a satellite communication system.

Regarding claim 12 Wiedeman and Levanon teach a device as recited in claim 10 or 11 except for at least two transmitters in a cold redundancy configuration; and a coupler for sending the signals from the transmitters to the at least two antennas. Wiedeman does teach at least two transmitters (see col. 5, lines 58-60). Wiedeman does teach a coupler for sending the signals from the transmitters to the at least two antennas (see col. 5, lines 56-59). Wiedeman does not specifically mention the transmitters being in a cold redundancy configuration but one of

ordinary skill in the art at the time the invention was made would realize that the transmitters could be configured in such a manner depending upon the outcome desired. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the invention adapt to include at least two transmitters in a cold redundancy configuration; and a coupler for sending the signals from the transmitters to the at least two antennas because this would allow for the determination and selection of a transmission radiation patterns.

Regarding claim 13 Levanon teaches a time-delay unit between the transmitter of a transceiver (see col. 9, lines 5-9 and FIG. 2).

Regarding claim 14 Levanon teaches a device as recited in claim 9 and is rejected given the same reasoning as above.

Regarding claim 15 Wiedeman teaches a method that excludes phase shifting of signals (see col. 4, lines 24-30 and col. 9, lines 9-17).

Regarding claim 16 Wiedeman teaches a method that is free of means for phase shifting of signals (see col. 4, lines 24-30 and col. 9, lines 9-17).

Response to Arguments

Applicant's arguments filed 2/24/04 have been fully considered but they are not persuasive.

In response to applicant's argument that the analysis of Wiedeman is improper and does not support motivation to modify Wiedeman to include circuitry and/or programming required for the incorporation of specific features of the claimed invention, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one

or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Wiedeman and Levanon are combinable in that they both relate to low-Earth orbit (LEO) satellite systems communicating with user terminals.

Regarding claims 1-2, 6, and 10 Levanon teaches delaying at least one of the signals received so that a path difference between the summed signals is at least one chip period (see col. 12, lines 65-67 and col. 13, lines 1-3), this relates to offsetting signals by at least one chip of the spread spectrum modulation. Regarding claims 5 and 11 Levanon teaches transmitted signals that have been modulated using different sequences (see col. 16, lines 54-58), this relates to spread spectrum modulating, using different sequences, signals to be transmitted. It is also noted that the features upon which applicant relies (i.e., the problem of poor antenna coverage in an area where the radiation patterns of the two antennas overlap) are not recited in the rejected independent claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Park U.S Patent No. 6,353,643 discloses a smart antenna receiver using pilot signal in CDMA mobile communication system and signal receiving method therefor.

Dent U.S Patent No. 6,157,811 discloses a cellular/satellite communications system with improved frequency re-use.

Yukitomo U.S Patent No. 6,240,149 discloses an adaptive transmission diversity apparatus and adaptive transmission diversity method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon J Miller whose telephone number is 703-305-2222. The examiner can normally be reached on Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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April 28, 2004

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